

PATENT

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Applicants: Mulier et al

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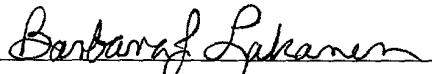
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Docket No.: P-7661.06

Title: TISSUE SEALING ELECTROSURGERY DEVICE AND METHODS OF
SEALING TISSUE

PRELIMINARY AMENDMENT

CERTIFICATE OF EXPRESS MAILING UNDER 37 CFR 1.10: I hereby certify that this Utility Patent Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service in an envelope addressed to: Box Patent Application, Assistant Commissioner for Patents, Washington, D.C. 20231 "EXPRESS No: ET929982313US on this 7 day of February, 2002.


Signature

Barbara J. Lakanen

Printed Name

Commissioner of Patents and Trademarks
U.S. Patent and Trademark Office
Washington, D.C. 20231

Dear Sir:

Please amend the specification as follows:

After the title and before the BACKGROUND OF THE INVENTION, please insert the following:

CROSS REFERENCE TO RELATED APPLICATIONS

The present application is a continuation of U.S. Serial No. 09/580,229, filed May 26, 2000, which is a divisional of U.S. Serial No. 08/901,890, filed July 26, 1997, which application is hereby incorporated by reference, now U.S. Patent 6,096,037.

Please cancel claim 1 (all of the claims in the application)

Please add the following new claims:

32. (newly added) An electrosurgical device for ablating tissue, the device comprising:

a jaw comprising a first jaw arm and a second jaw arm, the first and second jaw arms each having a portion on an inner face for engaging tissue;

a malleable portion on at least one of the first jaw arm and the second jaw arm, the malleable portion permitting manual shaping of at least one of the portions for engaging tissue to the contour of the tissue to be ablated;

a plurality of infusion openings positioned along an inner face of at least one of the first and second jaw arms, the plurality of infusion openings in fluid communication with a source of an electrically conductive liquid; and

an electrical conductor for conducting electrical energy to at least one of the first and second jaw arms.

33. (newly added) An electrosurgical device as in claim 32 wherein the infusion openings are positioned along the one or more hollow tubes.

34. (newly added) An electrosurgical device as in claim 32 wherein the infusion openings are micropores.

35. (newly added) An electrosurgical device as in claim 32 wherein the infusion openings have diameters in a range from about 0.002 to about 0.006 inches.

36. (newly added) An electrosurgical device as in claim 33 wherein the one or more hollow tubes comprise a conductive material.

37. (newly added) An electrosurgical device as in claim 36 wherein the conductive material is metal.

38. (newly added) An electrosurgical device as in claim 37 wherein the metal is stainless steel.

39. (newly added) An electrosurgical device as in claim 32 wherein at least one of the portions for engaging tissue comprises an electrically insulated portion.

40. (newly added) An electrosurgical device as in claim 32 wherein at least one of the portions for engaging tissue includes one or more grooves.

41. (newly added) An electrosurgical device as in claim 33 wherein the one or more hollow tubes are positioned within one or more grooves on at least one of the tissue engaging portions.

42. (newly added) An electrosurgical device as in claim 32 further comprising a handle and a mechanism connected to the handle and to the first and second jaw arms, whereby the movement of the first jaw arm in relationship to the second jaw arm may be manipulated from the handle.

43. (newly added) An electrosurgical device as in claim 42 further comprising a shaft extending from the handle to the first and second jaw arms, the shaft and jaws arms being elongated to permit endoscopic use of the device.

44. (newly added) An electrosurgical device as in claim 32 further comprising a pivot for pivoting movement of the first and second jaw arms towards each other and away from each other.

45. (newly added) An electrosurgical device as in claim 32 further comprising means for moving the first and second jaw arms in a parallel spaced relationship.

46. (newly added) An electrosurgical device as in claim 32 further comprising means for substantially uniformly compressing tissue by the portions for engaging tissue.

47. (newly added) An electrosurgical device as in claim 32 wherein the malleable portion can be shaped at at least one of the portions for engaging tissue to a curved contour.

48. (newly added) An electrosurgical device as in claim 32 wherein the malleable portion can be shaped at at least one of the portions for engaging tissue to a circular contour.

49. (newly added) An electrosurgical device as in claim 32 wherein at least one portion for engaging tissue comprises a porous surface.

50. (newly added) An electrosurgical system for ablating tissue, the system comprising:

a forceps, the forceps having a first jaw arm and a second jaw arm, each jaw arm including a plurality of infusion openings and at least one electrical conductor; the forceps having a malleable portion on each of the first jaw arm and the second jaw arm, the malleable portion permitting manual shaping of a portion of the first and second jaw arms to the contour of the tissue to be ablated;

an electrically conductive liquid source in fluid communication with the plurality of openings; and

an electrical energy source for supplying electrical energy to the electrical conductor.

51. (newly added) An electrosurgical system as in claim 50 wherein each jaw arm includes a hollow tube in fluid communication with the plurality of infusion openings and the electrically conductive liquid source.

52. (newly added) An electrosurgical system as in claim 51 wherein the infusion openings are positioned along the hollow tube.

53. (newly added) An electrosurgical system as in claim 50 wherein the infusion openings are micropores.

54. (newly added) An electrosurgical system as in claim 50 wherein the infusion openings have diameters in a range from about 0.002 to about 0.006 inches.

55. (newly added) An electrosurgical system as in claim 51 wherein the hollow tube comprises metal.

56. (newly added) An electrosurgical system as in claim 55 wherein the hollow tube comprises stainless steel.

57. (newly added) An electrosurgical system as in claim 50 wherein the electrically conductive liquid is saline solution.

58. (newly added) An electrosurgical system as in claim 50 wherein the electrically conductive liquid source supplies electrically conductive liquid at a rate in a range of about 0.01 to about 100 cc/min.

59. (newly added) An electrosurgical system as in claim 50 wherein the electrical energy source supplies electrical energy at a power in a range of about 1 to about 200 watts.

60. (newly added) An electrosurgical system as in claim 50 wherein the electrically conductive liquid source comprises a reservoir.

61. (newly added) An electrosurgical system as in claim 60 wherein the reservoir is an IV bag.

62. (newly added) An electrosurgical system as in claim 50 wherein the electrical energy source is a RF generator.

63. (newly added) An electrosurgical device as in claim 62 wherein the RF generator provides RF energy having a sine wave waveform.

64. (newly added) An electrosurgical device as in claim 63 wherein the sine wave waveform has a frequency of about 500 kHz.

65. (newly added) A method of ablating tissue using an electrosurgical system, the method comprising:

providing an electrosurgical forceps, the forceps having a first jaw arm and a second jaw arm, each jaw arm including a plurality of infusion openings and at least one electrical conductor;

manually shaping a portion of the first jaw arm and the second jaw arm to the contour of the tissue to be ablated

grasping an area of tissue using the shaped electrosurgical forceps;

supplying an electrically conductive fluid from an electrically conductive solution source to the plurality of infusion openings; and

supplying electrical energy from an electrical energy source to the electrical conductor.

66. (newly added) A method as in claim 65 wherein the supplied electrically conductive liquid is saline solution.

67. (newly added) A method as in claim 65 wherein the electrically conductive liquid is supplied at a rate in a range of about 0.01 to about 100 cc/min.

68. (newly added) A method as in claim 65 wherein the electrical energy is supplied at a power in a range of about 1 to about 200 watts.

69. (newly added) A method as in claim 65 wherein the electrically conductive liquid is supplied from a reservoir.

70. (newly added) A method as in claim 65 wherein the reservoir is an IV bag.

71. (newly added) A method as in claim 65 wherein the electrically conductive liquid is supplied at a rate in a range of about 0.01 to about 100 cc/min while the electrical energy is supplied at a power in a range of about 1 to about 200 watts.

72. (newly added) A method as in claim 71 wherein the electrically conductive liquid is supplied at a rate in a range of about 2 to 8 cc/min while the electrical energy is supplied at a power in a range of about 20 to 40 watts.

73. (newly added) A method as in claim 65 wherein the electrical energy source is a RF generator.

74. (newly added) An electrosurgical device as in claim 73 wherein the RF generator provides RF energy having a sine wave waveform.

75. (newly added) An electrosurgical device as in claim 74 wherein the sine wave waveform has a frequency of about 500 kHz.

REMARKS

The present application is a continuation application of U.S. Serial No. 09/580,229, filed May 26, 2000, which is a divisional of U.S. Serial No. 08/901,890, filed July 26, 1997, now U.S. Patent 6,096,037. Claims 2-31 were canceled in the Request for Continued Application. The present Preliminary Amendment requests cancellation of the remaining claim 1 and submits new claims 32-75. Support for the new claims 32-75 is found in the originally-filed specification. Accordingly, no new matter has been added. Consideration and allowance of claims 32-75 is respectfully requested.

Date 2/4/02

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